CLAIMS

1. In an intermediate node of a data network that comprises one or more virtual local area networks (VLANs), the intermediate node containing a forwarding database comprising one or more forwarding database entries, a method for controlling flooding of packets on a VLAN comprising the steps of:

establishing a limit that indicates a number of forwarding database entries that may be associated with the VLAN;

determining if a number of forwarding database entries associated with the VLAN matches the limit established for the VLAN; and

if so, performing an action for controlling the flooding of packets on the VLAN.

2. A method as defined in claim 1 wherein the intermediate node contains a media access control (MAC) limit database comprising one or more MAC limit database entries wherein each entry is associated with a VLAN and contains a MAC limit that indicates a number of forwarding database entries associated with the VLAN and a MAC count that indicates a number of forwarding database entries associated with the VLAN.

3. A method as defined in claim 2 comprising the steps of:

locating a MAC limit database entry associated with the VLAN; and

comparing the MAC count of the MAC limit database entry with the MAC limit of the MAC limit database entry to determine if the number of forwarding database entries associated with the VLAN matches the limit established for the VLAN.

4. A method as defined in claim 2 comprising the steps of:

accessing a forwarding database entry associated with the VLAN;

locating a MAC limit database entry associated with the VLAN;

comparing the MAC count of the MAC limit database entry with the MAC limit of the MAC limit database entry to determine if the MAC count matches the MAC limit; and

if not, updating the MAC count.

5. A method as defined in claim 1 wherein the action includes logging a message to a log accessible to the intermediate node.

6. A method as defined in claim 1 wherein the action includes disabling flooding for the VLAN.

7. A method as defined in claim 1 wherein the action includes disabling forwarding packets for the VLAN.

8. A method as defined in claim 1 wherein the action includes disabling learning for the VLAN.

9. A method as defined in claim 1 comprising the steps of:
acquiring a packet wherein the packet is associated with the VLAN;
determining if the VLAN is shut down; and
if so, dropping the packet.

10. A method as defined in claim 1 comprising the steps of:
acquiring a packet wherein the packet is associated with the VLAN;
determining if the forwarding database contains an entry which contains a MAC address that matches a source address contained in the packet;
if not, determining if learning is disabled for the VLAN; and
if not, generating a forwarding database entry that contains the source address of the packet.

11. A method as described in claim 1 comprising the steps of:
acquiring a packet wherein the packet is associated with the VLAN;
determining if the forwarding database contains an entry which contains a MAC address that matches a destination address contained in the packet;
if not, determining if flooding is enabled for the VLAN; and

if so, flooding the packet.

12. An intermediate node coupled to a data network containing one or more VLANs, the intermediate node comprising:

a forwarding database containing one or more entries wherein each entry is associated with a node accessible to the intermediate node and wherein each entry is associated with a virtual local area network (VLAN); and

a processor configured to, for each VLAN, (i) establish a limit for the VLAN wherein the limit indicates a number of forwarding database entries that may be associated with the VLAN, (ii) determine if a number of entries in the forwarding database associated with the VLAN matches the limit established for the VLAN, and (iii) if so, perform an action for controlling the flooding of packets on the VLAN.

13. An intermediate node as defined in claim 12 further comprising:

a media access control (MAC) limit database having one or more MAC limit database entries wherein each entry is associated with a VLAN and contains a MAC limit that indicates a number of forwarding database entries associated with the VLAN and a MAC count that indicates a number of entries in the forwarding database associated with the VLAN.

14. An intermediate node as defined in claim 13 wherein the processor is configured to, for each entry in the forwarding database, compare the MAC count with the MAC limit of the VLAN associated with the forwarding database entry to determine if the MAC count matches the MAC limit.

15. A intermediate node as defined in claim 13 wherein the processor is configured to update the MAC count if the MAC count does not match the MAC limit.

16. An intermediate node as defined in claim 12 wherein the action includes logging a message to a log accessible to the intermediate node.

17. An intermediate node as defined in claim 12 wherein the action includes disabling flooding for the VLAN.

18. An intermediate node as defined in claim 12 wherein the action includes disabling forwarding packets for the VLAN.

19. An intermediate node as defined in claim 12 wherein the action includes disabling learning for the VLAN.

20. A system comprising:

a forwarding database comprising one or more forwarding database entries associated with a VLAN;

means for establishing a limit wherein the limit indicates a number of entries contained in the forwarding database associated with the VLAN;

means for determining if a number of entries in the forwarding database associated with the VLAN matches the limit established for the VLAN; and

means for performing an action for controlling the flooding of packets on the VLAN, if the number of entries in the forwarding database associated with the VLAN matches the limit established for the VLAN.

21. A system as defined in claim 20 comprising:

a media access control (MAC) limit database comprising one or more MAC limit database entries wherein each entry is associated with a VLAN and contains a MAC limit that indicates a number of forwarding database entries associated with the VLAN and a MAC count that indicates a number of entries in the forwarding database associated with the VLAN.

22. A system as defined in claim 20 comprising:

means for accessing an entry in the forwarding database associated with a VLAN;

means for comparing a MAC count with a MAC limit associated with the VLAN to determine if the MAC count matches the MAC limit; and

means for updating the MAC count, if the MAC count does not match the MAC limit.

23. A computer readable medium containing computer executable instructions for controlling the flooding of packets on a VLAN, the computer readable medium containing computer executable instructions for:

establishing a limit of a number of forwarding database entries associated with the VLAN;

determining if a number of entries in the forwarding database associated with the VLAN matches the limit established for the VLAN; and

if so, performing an action for controlling the flooding of packets on the VLAN.